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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,409	01/23/2002	Maria Palasis	104914.132US2	1618

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EXAMINER	
SHUKLA, RAM R	

ART UNIT	PAPER NUMBER
1632	

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

Office Action Summary	Application No.	Applicant(s)	
	10/057,409	PALASIS, MARIA	
	Examiner	Art Unit	
	Ram R. Shukla	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on 5/24/04.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-54 is/are pending in the application.

4a) Of the above claim(s) 4-14,16,18,20,22-35 and 41-51 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-3,15,17,19,21,36-40 and 52-54 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 23 January 2002 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9/4,10/28 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Applicant's election with traverse of the invention of group I, claims 1-3, 15, 17, 19, 21, 36-40 and 52-54 in the reply filed on 2/23/04 and 5/24/04 is acknowledged. Applicants' election of VEGF for claims 5, 7, 25, 42, 44, 27; cTNC promoter for claims 30 and 32; and stem cells for claims 13 and 50 is also acknowledged.

The traversal is on the ground(s) that claims are sufficiently related to be properly presented in as single invention and that the inventions of all the groups call for the same delivery method and it is common delivery methods that links the present subject matter. This is not found persuasive because the methods of the different groups are patentably distinct and therefore would require separate searches. Additionally, it's not only search burden but also examination burden that determines restriction. MPEP 803 states:

"If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions.

The requirement is still deemed proper and is therefore made FINAL.

In the respons of 5/21/04, applicants have argued that four separate species elections did not make sense, however, did not point out why the election did not make sense. Additionally, applicants requested for reconsideration and withdrawl of the species election because applicants must incur added expense despite having made a bona fide attempt to fully respond to the office action on the belief that non-elected claims were withdrawn from consideration. However these arguments are not persuasive as discussed below. Applicants' have ignored the fact that applicants had traversed the restriction and election and in response to applicants' arguments if the office wanted to withdrawn restriction requirement or combine some groups, it could not do so because such species election would have been required for preparing first office action on merits.

2. Claim 4-14, 16, 18, 20, 22-35 and 41-51 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 2/23/04 and 5/24/04.

3. Claims 1-3, 15, 17, 19, 21, 36-40 and 52-54, drawn to a method of delivering an agent to an ischemic heart are under consideration. As noted in the previous office action, The restriction requirement between the linked inventions is subject to the non-allowance of the linking claim(s), claims 1-3. Accordingly, claims 1-3 will be subject to examination for non-allowance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-3, 15, 17, 19, 21, 36-40 and 52-54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claimed invention when interpreted in light of the specification encompasses: any cell or cells, any one or more drugs, an antisense DNA or RNA, or any other therapeutic agent useful to induce angiogenesis, increase contractile function in the heart, increase blood flow within the heart, stimulate collateral vessel development in the heart, promote tissue regeneration, improve exercise

tolerance, or treat myocardial ischemia. However, the specification as filed does not describe any of these agents.

In analyzing whether the written description requirement is met for genus claims, it is first determined whether a representative number of species have been described by their complete structure. When the claims are analyzed in light of the specification, instant invention recites a genus, a modulator. However, the specification does not teach what is the complete structure of any species of the claimed genera- any cell or cells, any one or more drugs, an antisense DNA or RNA, or any other therapeutic agent useful to induce angiogenesis, increase contractile function in the heart, increase blood flow within the heart, stimulate collateral vessel development in the heart, promote tissue regeneration, improve exercise tolerance, or treat myocardial ischemia. Except for disclosing that an agent could be any compound, the specification does not teach what would be the structure of a representative number of the species of the genera.

Next, then, it is determined whether a representative number of species have been sufficiently described by other relevant identifying characteristics (i.e. other than nucleotide sequence), specific features and functional attributes that would distinguish different members of the claimed genus. In the instant case, the only other identifying characteristic is that the agent has a function. However, the specification does not disclose any identifying characteristic as to how an artisan would have differentiated a an agent that has the asserted function from any other agents or compounds.

Accordingly, this limited information is not deemed sufficient to reasonably convey to one skilled in the art that the applicant is in possession of the broad genus of the agents at the time the application was filed. Thus it is concluded that the written description requirement is not satisfied for the claimed genus.

6. Claims 1-3, 15, 17, 19, 21, 36-40 and 52-54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in

such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claimed invention encompasses delivery of any cell or cells, any one or more drugs, an antisense DNA or RNA, or any other therapeutic agent useful to induce angiogenesis, increase contractile function in the heart, increase blood flow within the heart, stimulate collateral vessel development in the heart, promote tissue regeneration, improve exercise tolerance, or treat myocardial ischemia by intramyocardial delivery to treat any ischemic or disease heart. However, the specification as filed does not provide any guidance as to how all these agents would have been delivered to the recited sites in an animal to treat any condition related to heart.

The specification as filed describes induction of chronic myocardial ischemia in pigs and intramyocaridal injection of a plasmid (see example 1). The specification also teaches administration of an adenoviral vector – AdVEGF165 or AD-BetaGal by intramyocardial injection (see example 2). It is noted that while based on the teachings in the specification and in the art (eg. Kornowski et al. Catheterization and Cardiovascular Interventions 48 :447-453, 1999) an artisan could deliver an agent to the heart, specification does not provide any guidance regarding any specific guidance as to what doses of any agent will be delivered which would provide a therapeutic effect. The specification while teaches delivery of a gene therapy vector, it does not teach any specific guidance for delivering any agent. The specification in general discloses a general description of administration of a gene therapy vector, but does not teach as to how the method would be practiced using any agent. It is emphasized that the specification does not describe what agents would be delivered as discussed in the written description rejection.

In summary, while the specification teaches a method for delivering a gene therapy vector, it does not teach how to deliver any agent such that a therapeutic effect will be obtained and in view of the lack of written description of the agent to be delivered an artisan would not have known what agent to deliver and in what doses so that to obtain a therapeutic effect and would have required undue

experimentation to practice the claimed invention because the specification does not provide any specific guidance how to practice the claimed method.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 15, 17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 15, 17, and 19 are vague and indefinite because they recite non-elect subject matter. Applicants are advised to amend the claims to reflect the elected invention.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3, 15, 17, 19, 21, 36-40 and 52-54 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kornowski et al (Catheterization and Cardiovascular Interventions 48:447-453, 1999). The art teaches drug delivery by catheter based transendocardial injection to heart. The art assessed its procedural safety and performance characteristics (see the first paragraph on page 448, left column). The materials and methods section teaches the methodology, the instruments used in the methods and the protocol in detail). Pages 449-451 discusses the results and characterization of the model. Page 452-453 discuss the clinical implications of the method.

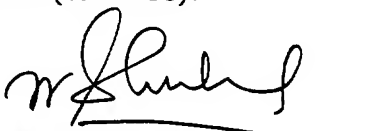
Accordingly, the claimed method is anticipated by the art of Kornowski et al. In the event that the claimed method is identical to those disclosed by Kornowski et al, it is considered that any differences would be result of minor variations, wherein such variants would have been obvious over the prior art. Thus, the claimed invention as a whole was at least prima facie obvious over, if not anticipated by, the prior art.

11. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram R. Shukla whose telephone number is (571) 272-0735 . The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached at (571) 272-0804. The fax phone number for TC 1600 is (703) 872-9306. Any inquiry of a general nature, formal matters or relating to the status of this application or proceeding should be directed to the Dianiece Jacobs whose telephone number is (571) 272-0532.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ram R. Shukla, Ph.D.
Primary Examiner
Art Unit 1632



RAM R. SHUKLA, PH.D.
PRIMARY EXAMINER